IN THE CLAIMS:

Claims 1 – 12 (Canceled)

13. (Currently Amended) An amplifier comprising:

an ortho-mode feed; ~~and~~

a reflective amplifier array adapted to be illuminated by said feed with an input wavefront with a first polarization and to return thereto an amplified wavefront with a second polarization orthogonal to said first wavefront;

feed means for illuminating said array, said feed means including means for illuminating said array with a spherical wavefront; and

means for converting said spherical wavefront to a planar wavefront, said means for converting including at least one reflective element and first and second mirrors.

14. (Original) The invention of Claim 13 wherein said array includes:

a monolithic semiconductor substrate and

means disposed on said substrate for coherently receiving and retransmitting electromagnetic energy.

15. (Currently Amended) The invention of Claim 14 wherein said means disposed on said substrate for coherently ~~reflecting~~ receiving and retransmitting electromagnetic energy includes an array of cells.

16. (Original) The invention of Claim 15 wherein each of said cells includes a first antenna for receiving said electromagnetic energy.

17. (Original) The invention of Claim 16 wherein each of said cells includes an amplifier connected to said antenna.

18. (Original) The invention of Claim 17 wherein each of said cells includes a second antenna for transmitting said electromagnetic energy.

19. (Original) The invention of Claim 18 wherein at least one of said antennas is a patch antenna.

20. (Currently Amended) The invention of Claim 16 wherein said patch antenna is a corrugated patch antenna.

Claims 21 – 25 (Canceled)

26. (Currently Amended) The invention of Claim ~~25~~ 13 wherein said first and second mirrors are dual shaped mirrors.

27. (Original) The invention of Claim 18 further including means for receiving and retransmitting a beam of electromagnetic energy while controlling the direction thereof.

28. (Original) The invention of Claim 27 wherein said means for receiving and retransmitting a beam of electromagnetic energy while controlling the direction thereof includes a phase shifter coupled between said first and said second antenna.

29. (Original) The invention of Claim 27 wherein said means for receiving and retransmitting a beam of electromagnetic energy while controlling the direction thereof includes at least one phase shifter coupled between at least two of said cells.

Claims 30 – 33 (Canceled)

34. (New) An amplifier comprising:

a monolithic semiconductor substrate;

first means disposed on said substrate for coherently receiving and retransmitting electromagnetic energy; and

second means disposed in alignment with said first means for splitting a received wavefront, reflecting a portion thereof to said first means and transmitting a portion thereof.

35. (New) The invention of Claim 34 wherein said means for splitting includes a partially reflective/partially transmissive surface.

36. (New) An amplifier comprising:

a monolithic semiconductor substrate;

an array of elements disposed on said substrate for coherently receiving and retransmitting electromagnetic energy; and

means for defining an axis of tilt of a beam generated by said array.

37. (New) The invention of Claim 36 wherein said means for defining an axis of tilt includes means for phase shifting a signal radiated from a first array element.

38. (New) The invention of Claim 37 wherein said means for defining an axis of tilt further includes means for feeding an output of said means for phase shifting to a second array element.